

Clinical Decision Support for Worker Health: A Qualitative Study of Five Primary Care Settings

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Introduction

Although primary care providers are usually the first to see patients with medical issues such as asthma symptoms that may be caused by workplace exposures, they do not routinely ask patients about their work¹⁻⁵. Occupational health physicians have developed evidence-based guidelines for helping to manage many such patients, but primary care providers are rarely aware of their existence⁶. Though computerized clinical decision support (CDS) holds potential for increasing awareness and providing guidance, it must be developed and implemented to fit the context and workflow of those who would benefit from having the information⁷.

This qualitative evaluation project was part of a larger project funded by the National Institute for Occupational Safety and Health (NIOSH) of the Centers for Disease Control and Prevention. The NIOSH project is designing, developing, and piloting CDS for the health of working patients in primary care outpatient settings. The first step in this project was the development of three knowledge resources (KRs) containing evidence-based information, decision logic, scenarios and examples of use. The KRs were prepared by three subject matter expert (SME) groups for three topics that are related to the health of patients who work and considered especially pertinent to a primary care practice. The three KRs focused on dealing with work environment factors that impact the management of a chronic disease (diabetes), guidance for return-to-work after lower back pain diagnosis not related to work, and diagnosis and management of work-related/work-exacerbated asthma.

The goal of this qualitative study is to identify the barriers and facilitators related to CDS for the clinical management of working patients in a variety of primary care settings, including assessment of the technical and organizational feasibility of implementing the CDS represented by each KR.

Methods

We used the Rapid Assessment Process (RAP), as previously described⁸, for studying five organizations, though we adapted it to include graphical elicitation interviews⁹ to evaluate the KRs. Institutional review boards (IRBs) at NIOSH and OHSU and each clinical site with an IRB approved or reviewed the study. Sites were selected for diversity in size, geography, organization, and electronic health record (EHR) product used. We selected subjects based on their roles. Data collection consisted of semi-structured and graphical elicitation interviews⁹ and observations in clinics. Broad areas for exploration included 1) present CDS, 2) clinic and individual workflow, 3) information already available to help manage care of working patients, such as the patient's work information, 4) barriers and facilitators of CDS for the clinical management of working patients, and 5) evaluation of the three KRs. Both template and grounded hermeneutic methods were used for analyzing data¹⁰⁻¹¹.

Results

We conducted five site visits between July 21st and September 11th, 2015. We interviewed 41 clinicians not deeply involved in informatics, 23 individuals who were informaticians or information technology specialists, 15 managers or staff members, and four quality improvement specialists, for a total of 83 interviews. We spent 30 hours observing in ten clinics. Template analysis of data pertaining to the three KRs gathered during graphic elicitation interviews yielded valuable content and context-related information for developers and implementers. Figure 1 includes the themes and subthemes that emanated from the hermeneutic analysis, grouped as facilitators and barriers. The main themes are of equal importance for acceptance of the proposed CDS, while the subthemes vary in strength of importance and specific relevance to worker health CDS.

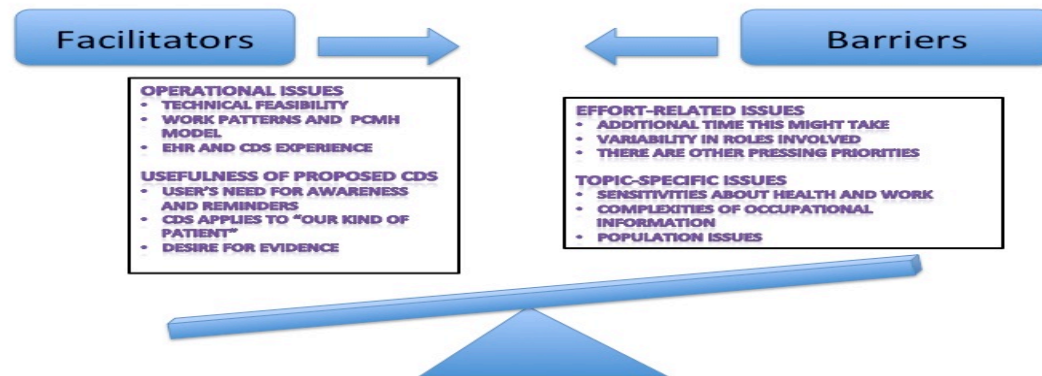


Figure 1. Facilitators and barriers to worker health CDS

Discussion and Conclusion

Using a qualitative approach which adapted RAP to evaluate three knowledge resources related to clinical management of working patients, we identified themes representing both barriers and facilitators that can be considered as the CDS is further developed and implemented. While some of these factors are similar to those discovered in prior CDS research, others, such as changing work patterns and roles and the sensitivities and complexities of work-related information, are novel and deserve further investigation.

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